his sail that the vessel will not forereach (or lay to) on the port tack, and wait until the storm passes on.

But on the right-hand semicircle the case is very different, and the starboard-tack rule is the proper one to adopt both with regard to the wind-shifts and also to the fact of the vessel always coming more and more "head on" to the sea—an all-important consideration.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Mr. Francis Darwin, F.R.S., of Trinity College, has been appointed Reader in Botany in succession to Dr. Vines. Mr. E. H. Douty, M.A., of King's College, has been appointed Senior Demonstrator in Anatomy; and Messrs. W. S. Melsome, Fellow of Queen's College, and Mr. R. W. Michell, of Gonville and Caius College, Junior Demonstrators of the same.

The elections to the Council of the Senate this year may be regarded as generally favourable to science; Dr. Peile, Prof. Macalister, Dr. Routh, Prof. Browne, and Mr. E. Hill, being six of the eight elected. Dr. Lea, however, was unsuccessful, this being his first candidature.

SCIENTIFIC SERIALS.

American Journal of Science, November.—On the deflection of the plumb-line and variations of gravity in the Hawaiian Islands, by E. D. Preston. The observations for gravity were carried out in 1887 on Mount Haleakala on the Island of Maui, which is rather over 10,000 feet high with one of the largest extinct craters in the world on its summit. From these researches it appears that deflections of the plumb-line are greater on insular than on continental mountains, presumably owing to the lighter surrounding sea-water; that gravity is not in defect, because it is here estimated from the true sea-level, and not from a sea-level elevated by continental attraction; that deflections are greater in the vicinity of extinct volcanoes than near active ones; and that the so-called "hidden causes," which in the Himalayas give a variation of gravity several times as great as those arising from the attraction of the mountains themselves, do not exist in the Hawaiian Islands.—Mineralogical notes, by S. L. Penfield and E. S. Sperry. Beryl and phenacite are here studied for the purpose of determining the presence of alkalies in these crystalline bodies. Analytical studies are also given of several other rare minerals, such as a specimen of monazite and oligoclase from North Carolina, sussexite from New Jersey, barium feldspar from Pennsylvania.—The absorption spectra of certain blue solutions, Part 2, by F. B. Pitcher. Here it is shown that blues and violets obtained by absorption in pigments and solutions, differ in several respects from those colours which approximate in hue to the longer wave-lengths of the spectrum. As a rule they are much less completely saturated, and they show irregularities of composition rarely met with in absorption reds and yellows.—An instrument for demonstrating the laws of transverse vibrations of cords and wires, by George S. Moler. The apparatus here described was designed to meet a want, felt in the laboratory, for an improvement over Melde's method of producing transverse vibrations of cords and wires.—Rhætic plants from Honduras, by J. S. Newbury. These fossils, chiefly from the San Juancito district, are clearly Upper Triassic, and greatly resemble those of the coal-bearing strata on the Yaki River, Sonora.—Energy and vision, by S. P. Langley. In this investigation the author has had mainly in view the assumption of H. F. Weber and others that the luminosity of a colour is proportionate to the energy that produces it, an assumption which is shown to be absolutely groundless.—Mr. J. H. Long has a paper on circular polarization of certain tartrate solutions, and Mr. W. E. Hidden sends some notes on some specimens of xenotime from New York and North Carolina.

Bulletins de la Société d'Anthropologie, tome xi. Série 3 fasc. 1 (Paris, 1888).—On aphasia, by M. Hervé, who draws attention to a case recorded by Larrey sixty years ago, of a soldier, wounded at Waterloo on the left frontal, who lost his memory of words, more especially nouns. After death the ball was found close to the dura mater, but separated from it by the portion of bone embedded with it at the moment of the accident. The case is curious as having been recorded so long before Broca's discovery of the localization of speech.—Monstrosity of the left upper extremity, by M. Variot. The relatively small but otherwise normally formed left hand appears to proceed directly from the stump of the flattened shoulder with no trace of arm, or forearm. The body presents no other anomaly.—The history of the various modifications effected in the ship's rudder, by M. O. Beauregard.—On certain customs, connected with phallic worship, common to the Abyssinians and the ancient Spartans.—On cannibalism and its assumed origin. The consideration of these questions at an earlier meeting by M. de Nadaillac has been again made the subject of an animated discussion between himself and M. Mortillet; for, while the latter believes that this practice must originally have emanated from some perverted religious idea, M. de Nadaillac refers it solely to the promptings of famine, which is capable of engendering in man, if not mania, a depraved taste, and bestial inclinations, which civilization has never been able wholly to eradicate. The absence of animals adapted for human food he considers to have been a powerful factor in widely remote lands, as Mexico, Tierra del Fuego, New Zealand, the Pacific Islands, &c., where the people under various stages of civilization and barbarism have alike practised cannibalism, whether as a national rite or a social custom. The discussion supplies an exhaustive treatise on the subject, which at a subsequent meeting of the Society was again considered at great length by Dr. Bordier, who concludes his comprehensive essay by showing that, as the dental system in man, as in the other Primates, does not allow us to assume that in his primitive condition he was carnivorous, we must consider cannibalism as an acquired and not an original custom.—Communication, by M. D'Acy, regarding Palæolithic mortuary deposits in rock-caves. This paper gave rise to a discussion as to the age of human remains found at Solutré, Furfooz, Spy, Mentone, &c., M. de Mortillet regarding them in opposition to M. D'Acy as Neolithic, rather than Palæolithic.—On the choice of a fixed point of departure for cranial measurements, by Dr. Fauvelle. This the writer considers is to be sought at the base of the cranium, at the cerebral extremity of the vertebral column, where alone one definite point can be found which is always the same in the entire series of the Vertebrata, being indicated in the embryo by the anterior terminus of the dorsal cord, and in the adult by the posterior portion of the first cervical nerve.—The present number of the *Bulletins* contains the ordinary annual report of the statutes, rules, &c., of the Society.

Fasc. 2.—Continuation of the discussion on cannibalism reported in the previous number, and treating specially of the character and adaptability of the dental system in man.—On woman in relation to cannibalism in Polynesia, by M. Letourneau. The exclusion of women from cannibal feasts in some members of this group is referred to a greedy desire on the part of the chiefs to reserve such enjoyments for themselves. Human flesh being early tabooed to women, they gradually acquired a strong distaste for it, which in course of time was transmitted as an hereditary characteristic even to their male descendants, some of whom, as the majority of the Tahitians, had begun to manifest a repugnance for this species of food as early as the time the islands were first visited by Captain Cook.—On the ethnology of Le Rouergne, by M. Durand de Gros. The author regards this district as chiefly Iberian in character, and considered that the whole of the Department of Aveyron, with L'Hérault and La Lozère, forms the eastern confines of a remarkable linguistic region, comprising the whole of ancient Aquitania. He points out that the Garonne is a phonetic frontier, to the north of which all forms of local *patois* possess the letter *f*, while on the opposite side that character is replaced by *h*, the *filha*, *ferre* (*fille*, *fer*), of the peasants on the right bank, being pronounced *hilha*, *herre*, by those on the left. The paper supplies much interesting matter in regard to the various linguistic currents that have been successively incorporated in the main stream of the vernacular through consecutive immigrations; Latin, Celtic and Teutonic suffixes being often associated with some alien root in the names of families and places. The brachycephalic character of the district is at present very strongly marked, while the crania belonging to ancient times, as those found in the dolmens of La Lozère, are without exception dolichocephalic.—On the stature of the Parisians, by M. Manouvrier. A comparative analysis of the results yielded for the twenty arrondissements of Paris shows that, other conditions being equal, affluence, and the absence of want and of the necessity for excessive labour, have a favourable influence on the stature

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of a man. It is found, moreover, that while the mean height of Frenchmen belonging to families in easy circumstances does not notably alter, it is being very sensibly diminished among the poor.—On the skull of an adult gorilla, by M. Hervé.—On prehistoric discoveries in Portugal, by M. de Mortillet, who reports the recent inauguration at Lisbon of a course of lectures on archæology by M. da Silva, to whom we are indebted for the discovery of a deposit near Leiria, in which flat hatchets and other instruments have been found, all of which are of pure copper.—The Neolithic Age at Champigny, on the Seine, by M. E. Rivière. The finds at this station have been rich in flint and other stone instruments, with fragments of coarse pottery, but they contain few bone remains, these belonging moreover, with the exception of the elk, to ordinary domestic animals. No human bones have been obtained.—On certain anthropological researches in the Caucasus, by M. E. Chantre. This communication supplies an interesting summary of the author's important work on the anthropology of the Caucasian district, which is based on the result of personal observations, and a careful study of the human and other remains derived from numerous ancient tribal burial-places, and is copiously provided with tables of comparative cephalic and other anthropometric determinations.—On a prehistoric station at Aragua, Venezuela, by M. Marcano.—A prehistoric necropolis at Saint Ellier (Maine-et-Loire) by M. Bonnemère.—On the mammillated menhirs of Sardinia, by M. de Mortillet.—On aphasia, by M. Ploix. This paper, which is mainly based on the deductions of Broca, gave rise to repeated discussions, in which Dr. Fauvelle and others took an active part in defending their special views as to the localization of speech.—Communication, by M. Hervé, on his memoir entitled "Broca's Convolution in the Primates." The writer demonstrates the claims of Leuret to be regarded as the first who recognized in the brain of the Simiadæ the prototype of the convolutions of the human brain, his discovery of a cerebral type common to all the representatives of the group of Primates having preceded by thirty years the researches of Darwin, Huxley, Vogt, and Broca.—On the efficacy of the poisons used in olden times in Europe, and still employed by Negritos and others, for tipping arrows and other weapons, by M. Laborde.—On a case of congenital blindness and deafness, with mutism, reported in New York, and communicated by M. de Nadaillac.—On cannibalism in Madagascar, as recorded in the work of M. de Flacourt in 1650, by M. Beauregard.

SOCIETIES AND ACADEMIES.

LONDON.

Linnean Society, November 1.—Mr. W. Carruthers, F.R.S., President, in the chair.—Prof. Bower exhibited and made remarks upon some adventitious buds on a leaf of *Gnetium gnemon.*—Mr. John Young exhibited (1) a rare bird (*Pluvianellus sociabilis*), unobserved for fifty years, and lately rediscovered by him in Patagonia; (2) a cluster of nests formed of lichen (*Usnea*) by a swift, as supposed of the genus *Collocalia*, from a cave in Eimeo, one of the Society Islands; (3) remarkably elongated tail feathers of domestic cock (11 feet in length), artificially produced by the Japanese; (4) nest and eggs of the snow bunting (*P. nivalis*), taken during the past summer in Scotland.—Mr. Thomas Christy exhibited a new method of transmitting light to a microscope by means of a curved rod of glass.—The Rev. R. Baron read a paper on the flora of Madagascar, in which he gave an interesting account of his explorations and collections in that country.—In another paper, entitled "Further Contributions to the Flora of Madagascar," Mr. J. G. Baker, F.R.S., described the principal novelties brought home by Mr. Baron, and paid a well-deserved tribute to his energy and ability as a botanical explorer.

Mathematical Society, November 8.—Sir James Cockle, F.R.S., President, in the chair.—At the commencement of the meeting the Chairman feelingly dwelt upon the loss the Council and the Society had sustained by the recent decease of Arthur Buchheim (see NATURE, vol. xxxviii. p. 515).—The gentlemen whose names were given in a recent issue having been elected on the new Council, the new President (J. J. Walker, F.R.S.) took the chair, and called upon the retiring President to read his address on the confluences and bifurcations of certain theories.—Other communications that were made were:—Cyclotomic functions, § 1, groups of totitives of n; § 2, periods of nth roots of unity, by Prof. Lloyd Tanner.—On a theory of rational symmetric functions, by Captain P. A. MacMahon, R.A.—The factors and summation of $1^r + 2^r + \ldots + n^r$, by Rev. J. J. Milne.—Raabe's Bernoullians, by J. D. H. Dickson.—Certain algebraical results deduced from the geometry of the quadrangle and tetrahedron, by Dr. Wolstenholme.—On a certain atomic hypothesis, by Prof. K. Pearson.—On deep-water waves resulting from a limited original disturbance, by Prof. W. Burnside.

Entomological Society, November 7.—Dr. D. Sharp, President, in the chair.—M. A. Wailly exhibited a large and interesting collection of Butterflies recently received from the Gold Coast and other parts of West Africa. The collection included about forty-seven species belonging to the genera *Papilio*, *Diadema*, *Salamis*, *Romalæosoma*, *Charaxes*, *Harma*, *Euryphene*, *Junonia*, *Aterica*, *Hypanis*, *Eurytela*, *Mycalesis*, *Cyrestis*, *Nepheronia*, *Mylothris*, *Belenois*, &c. M. Wailly stated that several of the species were undescribed, and were not represented in the British Museum collections.—Mr. Jenner-Weir exhibited four bred specimens of Ant-lions, two of which were from Saxon Switzerland, and the other two from Fontainebleau. He stated that he believed the specimens belonged to two distinct species. Mr. McLachlan said that the specimens all belonged to one species, viz. *Myrmeleon formicarius*, Auct. = *europæus*, McLach.—Mr. W. C. Boyd exhibited an example of *Pterophorus zetterstedtii*, taken at Sydenham. He remarked that this species had hitherto only been recorded from Lynmouth and Folkestone.—Mr. Enock exhibited specimens of *Cecidomyia destructor* (Hessian Fly), illustrating the life-history of the species, and made remarks on them.—Mr. Wallis Kew exhibited a specimen of *Dytiscus marginalis* having a small bivalve shell attached to one of its legs. The bivalve had apparently attacked the *Dytiscus* and refused to relax its grasp. A discussion ensued, in which Dr. Sharp, Mr. Stainton, and Mr. Kew took part.—Mr. W. E. Nicholson exhibited several specimes of *Acidalia immorata*, Linn., caught by him near Lewes. Mr. Jenner-Weir observed that the species had only recently been added to the British list, and that it was remarkable how so comparatively large a species could have been hitherto overlooked. It was also remarked that a specimen of this species from the collection of the late Mr. Desvignes had been exhibited by Mr. Stevens at the meeting of the Society in November 1887.—Dr. Sharp exhibited a large number of species of Rhynchophora, collected by Mr. George Lewis in Japan.—Mr. F. P. Pascoe read a paper entitled "Descriptions of New Longicorn Coleoptera."—Dr. Sharp read a paper entitled "The Rhynchophorous Coleoptera of Japan."

PARIS.

Academy of Sciences, November 3.—M. Janssen in the chair.—Essay on the theory of the Belleville carriage-spring, by M. H. Resal. This spring, devised about twenty-five years ago, has yielded excellent results in its application to railway rolling-stock. Here the principle of its action is worked out theoretically.—On the advantages of the use of electric light in the observations of marine zoology, by M. de Lacaze-Duthiers. An account is given of the system of electric light now in use at the Arago Laboratory of the Banyuls station, by means of which the author has been enabled to carry out some of his most important recent observations on marine life. The transparent animals especially can be studied with great advantage in a luminous atmosphere, revealing even the embryonic organisms, which cannot be detected in ordinary light.—Positions of Barnard's comet (September 2, 1888) measured at the Observatory of Besançon, by M. Gruey. The observations were taken jointly with M. Hérique for the period from October 11–17.—Observations of Barnard's new comet (October 30), and of Palisa's new planet, 281, made at the Paris Observatory (equatorial of the west tower), by M. G. Bigourdan. The positions of the comparison stars and the apparent positions of the comet and of the planet for November 3 are given.—On a triple determination of the latitude of the Gambey circle, by M. Périgaud. These determinations, effected by means of the new mercury bath described in the *Comptes rendus* for March 16, 1888, show that the latitude of the circle is as nearly as possible 48° 50′ 10″·9. It also appears that the latitude does not vary with the seasons, the result obtained in October 1888 being identical with that previously determined by the same instrument in June 1887.—On a means of studying the slight deformations of liquid sur-

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